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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,504	08/27/2003	Yosuke Inomata	81872.0052	6973

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EXAMINER

ALANKO, ANITA KAREN

ART UNIT PAPER NUMBER

1765

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/650,504	<b>Applicant(s)</b> INOMATA ET AL.	
	<b>Examiner</b> Anita K. Alanko	<b>Art Unit</b> 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 September 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13, 14, 20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13, 14, 20 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8-30-06</u> | 6) <input type="checkbox"/> Other: _____  |

***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: explicit basis for the new limitation “wherein a part of said chamber is connected to a ground” in claims 13 and 20 appears to be missing from the specification. It is shown in the figures, however basis should be provided in the specification.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 20-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 20, line 7, the term “fine” is a relative term. It has not been clearly defined in the specification or the prior art, and therefore the metes and bounds of the claim are unclear. It may be simply deleted.

Claim 21 fails to cure the indefiniteness of its base claim, and is therefore also rejected.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

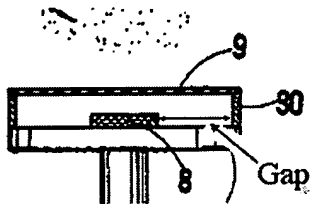
Claims 20-21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nishibayashi et al (US 5,417,798).

Nishibayashi discloses a dry etching method comprising:

placing a substrate 8 to be etched inside a chamber 1 (Fig.5); and

covering said substrate to be etched with a plate 9 provided with a number of opening portions (col.5, lines 20-21),

wherein a protruding wall 30 is provided to said plate on a surface opposing said substrate to be etched and said protruding wall is separated from a nearest surface of said substrate by a gap (see below, excerpt from Fig.5).



As to amended claim 20, Nishibayashi discloses that the upper electrode is grounded, which broadly interpreted is a part of the chamber. Nishibayashi also discloses to form textures (depositing diamond) on a surface of the substrate to be etched by applying RF power to the electrode (col.7, lines 1-10).

Claims 20-21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Gut et al (US 4,810,322).

Gut discloses a dry etching method comprising:

placing a substrate 22 to be etched on an electrode 16 inside a chamber 12 (Fig.1),  
wherein a part of said chamber is connected to a ground (col.2, lines 13-13);  
covering said substrate to be etched with a plate (shown in Fig.2) provided with a number  
of opening 32, 34; and  
forming textures on a surface of said substrate to be etched by applying RF power to the  
electrode (col.2, lines 1-18),  
wherein a protruding wall ("protrusion" col.4, lines 46-47) is provided to said plate on a  
surface opposing said substrate to be etched and said protruding wall is separated from a nearest  
surface of said substrate by a space (inherent since it extends from the plate 30 toward the  
bottom plate).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all  
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the  
combination of Cain (US 5,503,881) and Gut et al (US 4,810,322).

Cain discloses a dry etching method comprising:

placing a substrate 96 to be etched inside a chamber (Fig.3B, col.3, lines 54-65); and  
covering said substrate to be etched with a plate 92 provided with a number of opening  
portions ("apertures" in bottom surface 94),

wherein a distance between a surface opposing said substrate to be etched and said substrate to be etched in a peripheral portion ( $db'$  and  $db''$ ) is set shorter (col.3, line 62) than a distance between the surface opposing said substrate to be etched and said substrate to be etched in a central portion of said plate ( $db''$ ).

As to amended claim 13, Cain fails to disclose that a part of the chamber is connected to a ground.

Gut teaches that it is useful during RIE using a chamber that has a metal plate (Fig.1 & 2) with distributed openings in order to achieve uniform processing, that a part of the chamber is grounded (col.2, lines 11-13).

It would have been obvious to one with ordinary skill in the art to ground the chamber and thereby cover the substrate to be etched with a plate between said part of said chamber and said electrode in the method of Cain because Gut teaches that this is a useful configuration for RIE.

### ***Response to Amendment***

The objection to the specification is withdrawn since basis for the term "space" is found at page 21. The 35 USC 102 rejection over Cain is withdrawn since Cain does not explicitly disclose grounding.

The specification is objected to as not providing explicit basis for where grounding the chamber. Claims 13-14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Gut. Claims 20-21 remain rejected under 35 U.S.C. 102(b) as being clearly anticipated by

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Nishibayashi et al (US 5,417,798). Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Cain (US 5,503,881) and Gut et al (US 4,810,322).

Gut is newly applied to teach the limitation of grounding. Gut also discloses a protruding wall.

### ***Response to Arguments***

Applicant's arguments filed 9/27/06 have been fully considered but they are not persuasive, to the extent they still apply. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection (Gut).

Applicant argues that Cain does not disclose grounding. In response, Gut is newly applied to teach this limitation.

Applicant argues that Nishibayashi fails to teach forming fine textures by applying RF power. In response, the claims do not cite to etch. They cite to deliver RF, which Nishibayashi does. Growing films also forms textures on the surface of the substrate to be etched (the etching is intended use and is given little weight).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Deguchi is cited to show an upper chamber that is grounded.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on M-F, 9 am-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1464. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would



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like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Anita K. Alanko*

Anita K Alanko  
Primary Examiner  
Art Unit 1765